

83. A surface optical apparatus according to claim 81, wherein the size of the opening is less than 100 nm.

84. A surface optical apparatus according to claim 81, wherein the shape of the protrusion is a quadrangle pyramid.

85. A surface optical apparatus according to claim 81, wherein said surface light emitting device is supported by said substrate through an elastic supporter.

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86. A surface optical apparatus according to claim 81, wherein said substrate comprises a Si substrate with a SiN_x thin layer formed thereon, and said elastic supporter comprises a portion of said SiN_x thin layer under which Si substrate is removed.

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87. A surface optical apparatus according to claim 81, wherein said substrate comprises a Si substrate with a SiN_2 thin layer and a Si thin formed thereon in this order, and said elastic supporter comprises a portion of said Si thin layer under which said Si substrate and said SiN_2 thin layer are removed.

88. A surface optical apparatus according to claim 81, wherein the surface optical device further comprising a photodetector to detect output light of the surface light emitting device.

89. A surface optical apparatus according to claim 81, wherein said surface light emitting device comprises a surface emitting semiconductor laser.

90. A surface optical apparatus according to claim 81, wherein said surface light emitting device comprises thin semiconductor layers grown on another substrate, and said another substrate is mounted on said substrate.

91. A surface optical apparatus according to claim 89, wherein the surface emitting semiconductor laser includes at least one of a layer of GaAs, a layer of AlGaAs and a layer of InGaAs.

92. A surface optical apparatus according to claim 89, wherein the surface emitting semiconductor laser includes at least one of a layer of GaN, a layer of AlGaN and a layer of InGaN.

93. A surface optical apparatus comprising:
an elastic supporter; and
a surface light emitting device on the elastic supporter.

94. A surface optical apparatus according to claim 93, wherein said elastic supporter is shaped into a cantilever.

95. A surface optical apparatus according to claim 93, wherein said elastic supporter is shaped as a trapezoidal cantilever whose central portion is removed.

96. A surface optical apparatus according to claim 93, wherein said surface light emitting device comprises a surface emitting semiconductor laser.

97. A surface optical apparatus according to claim 93, wherein the surface optical device further comprising a photodetector to detect output light of the surface light emitting device.

98. A surface optical apparatus according to claim 96, wherein the surface emitting semiconductor laser includes at least one of a layer of GaAs, a layer of AlGaAs and a layer of InGaAs.

99. A surface optical apparatus according to claim 96, wherein the surface emitting semiconductor laser includes at least one of a layer of GaN, a layer of AlGaN and a layer of InGaN.--

REMARKS

The claims are 81-99 with claims 81 and 93 being independent. Former claims 1-80 have been cancelled without prejudice or disclaimer. Consideration of the claims is expressly requested.

The Abstract of the Disclosure has been corrected as requested.

The objection to the drawings has been rendered moot by the cancellation of claim 15. The objection to claims 1, 14, 15, 19, 21, 22, 31, 38, 39, 40, 43, 44, 45, 54, 55, 60, 61 and 62 has been rendered moot by the cancellation of such claims.

It is believed that the art rejection has also been rendered moot by the cancellation of the formerly pending claims.